

Serial No. 10/681,597
Filing Date: October 8, 2003
Amendment and Response to Office Action

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AMENDMENTS TO SPECIFICATION

Please amend the specification as indicated below:

At page 8, first paragraph:

The aluminosilicate can be produced by a method analogous to that described in U.S. Patent No. 5,612,522, namely, by the formation of an aluminosilicate gel from slurried aluminum hydrate and alkali metal silicate in the presence of aqueous sodium hydroxide (e.g., by mixing with about 11% to about 14% of 50% concentration) in the presence of UV radiation (having a wavelength ranging from about 2000 to about 3900 angstroms). However, in addition to these components, it has been found that the addition of about 2% to about 8% by weight of nanotitanium dioxide having an average particle size in the range of about 1 to about ~~50~~ 100 nm to the slurry results in a material that is extremely effective at removing organic materials from water.

At page 8, second paragraph:

Desirably, the titanium dioxide is added to the slurry prior to or during irradiation. This helps to bind the nanoparticulates to the resulting aluminosilicate more strongly. Curing time (time of exposure to UV radiation) will depend somewhat on the frequency and intensity of the UV source used, however generally ranges from about 5 days to about 14 days. Longer exposure times tend to increase the pore size for a given UV source and composition. Suitable nanoparticulate materials are those obtained as fumed metal oxides or hydroxides, having average diameters ranging from about 20 to about 100 nm ~~um~~. These particles are described in U.S. Serial No.

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09/854,010, filed May 11, 2001 and in U.S. Serial No. 10/304,898, filed November 26, 2002, the entire contents of each of which is incorporated herein by reference.

At page 11, first paragraph:

Eight pounds alumina hydrate was added to approximately 1 gallon sodium hydroxide, 50% solution. It was cooked 0.5 hour at 120-300 °F, average 150 ° until the alumina hydrate was dissolved. The slurry was mixed with sodium silicate containing 4% titanium dioxide having an average particle size of 20-100 nm μm. The volume of sodium silicate mixed was 5.75 gallons, then mixed for 60 seconds at 600 rpm, and put on a curing bed and exposed to UV light for 5 to 7 days. The resulting material was placed in a ceramic tray and heated to 500 °C for 7 hours.